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| EXAMINER | |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/797,455 | ALVIN ET AL. | |
| | Examiner | Art Unit | |
| | Natasha Young | 1709 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on 3-10-04.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) 1-31 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-31 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 3-10-04 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 10/03/2004.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Specification*

The disclosure is objected to because of the following informalities: change the "or" in paragraph 0024 of phrase "in case or a reticulated foam support" to "of"; and the specification does not provide antecedent basis for "rich catalytic stage" and "lean catalytic stage" as claims in Claims 22 and 23.

Appropriate correction is required.

### *Claim Objections*

Claim 1 is objected to because of the following informalities: a hyphen should be placed between the words cross and sectional in the third part of claim 1 to maintain consistency. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 6, 9, 20, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Dalla Betta et al (US 5,183,401).

Regarding claim 6, the Dalla Betta et al reference teaches catalytic combustor (see Abstract) comprising: a first catalytic zone (stage) receiving an oxidizer and a fuel and discharging a partially oxidized fuel/oxidizer mixture (see column 6, paragraphs 4 and 5); and a second catalytic zone (stage) receiving the partially oxidized fuel/oxidizer mixture from the first stage and further oxidizing the partially oxidized fuel/oxidizer mixture, the second catalytic zone comprising a passageway for conducting a bypass portion of the partially oxidized fuel/oxidizer mixture past a catalyst disposed therein and having an outlet temperature elevated sufficiently to complete oxidation of the partially oxidized fuel/oxidizer mixture without using a separate ignition source (see column 10-12); and a homogeneous combustion zone (oxidation completion stage) disposed downstream of the second catalytic stage recombining the bypass portion with a catalyst exposed portion of the partially oxidized fuel/oxidizer mixture and completing oxidation of the partially oxidized fuel/oxidizer mixture (see column 12, line 65 – column 13, line 25).

Regarding claim 9, the Dalla Betta et al reference teaches the second catalytic stage further comprises a first region comprising a first catalytic material, and a second region disposed downstream of the first region and comprising a second catalytic material different from the first catalytic material (see column 10, 2$^{nd}$ and 4$^{th}$ paragraphs).

Regarding claim 20, the Dalla Betta et al reference teaches second catalytic stage further comprises metal sheets coated on one side with catalyst and combined with other sheets to form honeycomb having longitudinal passageways (column 10, line

62 – column 11, line 45), thus a plurality of catalytic material coated plates defining longitudinal passageways.

Regarding claim 21, the Dalla Betta et al reference teaches the second catalytic stage further comprises corrugated and flat sheet combined to form a honeycomb, thus a catalyst support selected from the group consisting of a honeycomb structure, a tower packing structure, and a packed particle structure (see figure 3C).

Claims 15 and 16 are dependent on claim 13 such that the reasoning used for rejecting claim 13 will be used for the claims.

Regarding claim 15, the Dalla Betta et al reference teaches separate catalytic elements comprise different cross-sections (see column 11, 2nd and 4th paragraphs).

Regarding claim 16, the Dalla Betta et al reference teaches the separate catalytic elements comprise different catalytic materials (see column 10, 2nd paragraph and column 11, 2nd and 4th paragraphs).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dalla Betta et al (US 5,183,401) as applied to claim 6, and further in view of Karrs (US 2003/0072693 A1).

Regarding claim 7, the Dalla Betta et al reference does not teach transition stage disposed between the first catalytic stage and the second catalytic stage, the transition stage comprising a narrowed flow area region disposed between an inlet end receiving the partially oxidized fuel/oxidizer mixture from the first catalytic stage and an outlet end discharging the partially oxidized fuel/oxidizer mixture into the second catalytic stage.

The Karrs et al reference teaches a transition stage (see paragraphs 0038 and 0039) to be disposed between the first and second catalytic stages.

It would have been obvious to one having ordinary skill in the art at the time the invention to modify the invention of Dalla Betta et al with the transition stage as a way to receive the partially oxidized fuel/oxidizer mixture from the first catalytic stage and an outlet end discharging the partially oxidized fuel/oxidizer mixture into the second catalytic stage. The transition stage would evenly distribute the fuel across the face of the catalyst of the second stage (see Karrs et al paragraph 0039).

Claims 8, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dalla Betta et al (US 5,183,401) as applied to claim 6, and further in view of Spadaccini et al. (US 5,207,053).

Dalla Betta et al disclose using noble metals such as palladium and platinum or metal-oxygen catalyst material as the catalyst in the second catalytic stage.

Spadaccini et al. teach that catalyst used for combustion of fuel for turbines include precious metal catalyst such as platinum and palladium and zeolites (col. 5, lines 3-7). Spadaccini et al. also teach that a staged rich/lean combustion reduces $No_x$ emissions (col. 1, lines 19-21).

It would have been obvious to one having ordinary skill in the art at the time the invention to have used any of palladium, platinum or zeolite for the catalytic material in the second stage of the method of Dalla Betta et al., as taught by Spadaccini et al. as alternative catalyst used fro combustion of fuel for turbines. The use of zeolite, as claimed in Claim 8, would have been obvious to one of ordinary skill in the art as a suitable catalyst for the second catalytic stage in the method of Dalla Betta et al.

It would have been obvious to one having ordinary skill in the art at the time the invention to have provided the first and second catalytic stages in the method of Dalla Betta et al. as rich and lean catalytic stages, respectively, as claimed in Claims 22 and 23, as taught by Spadaccini et al. to reduce $No_x$ emissions.

Claim 10 and 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dalla Betta et al (US 5,183,401) as applied to claim 6, and further in view of Fay, III et al (US 6,040,266).

Regarding claim 10, the Dalla Betta et al reference discloses that the first catalytic material is disposed on a metallic support in the first catalytic stage but does not disclose disposing the catalytic material in the second catalytic stage on a ceramic support of ceramic reticulated foam.

The Fay, III et al reference teaches ceramic reticulated foam catalyst support provides greater surface contact and mixing at equivalent or reduced pressure drops and greatly reduced catalyst dimensions than honeycomb structure (column 3, line 43-47, column 4, lines 4-6).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided the catalyst support in the second catalytic stage of Dalla Betta as a ceramic reticulated foam catalyst support, as taught by Fay, III et al., to provide greater surface contact and mixing at equivalent or reduced pressure drops.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dalla Betta et al (US 5,183,401) as applied to claim 6, and further in view of Yoshizaki (US 5,800,789).

Regarding claim 11, the Dalla Betta et al reference teaches the second catalytic stage further comprises a metallic support for platinum or palladium catalyst (see column 10, 3rd paragraph).

The Dalla Betta et al reference does not teach a metallic support comprising a metal alloy selected from the group consisting of molybdenum disilicide, iron-chromium-aluminum, and iron aluminide.

The Yoshizaki reference teaches a metallic support for platinum or palladium catalyst comprising iron-chromium-aluminum alloy (column 6, 9th paragraph).

It would have been obvious to one having ordinary skill in the art at the time the invention to have provided the metal support for the catalyst of the second combustion stage of the Dalla Betta et al. reference of iron-chromium-aluminum alloy, as taught by Yoshizaki, as metal support used for platinum or palladium catalyst.

Claims 13 –16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dalla Betta et al (US 5,183,401) as applied to claim 6, and further in view of Fay, III et al. and Lynwood et al (US 5,228,847).

Fay, III et al. teach that ceramic or metallic reticulated foam for catalyst systems provide much greater surface contact and mixing at equivalent or reduced pressure

drops and reduced catalyst dimensions compared to honeycomb structure (column 3, line 41 – column 4, line 36).

Lynwood et al. teach that combustion is maintained at high flow rates with temperature below that necessary to sustain combustion at that flow rate by providing a plurality of foam or honeycomb catalyst bodies with combustion passages and bypass passages free of catalyst so that combustion takes place with part of the combustible mixture bypassing the combustion passages. The catalyst bodies can be of different cross-sectional shapes and are spaced apart from each other (columns 2-10, Fig. 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the second combustion stage of the Dalla Betta et al reference with the reticulated ceramic foam catalyst support of the Fay, III et al. reference to provide a catalyst support with greater surface contact and mixing at equivalent or reduced pressure drops and reduced catalyst dimensions compared to a honeycomb structure.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have also provided a plurality of the ceramic foam supports in the second stage and with combustion passages and bypass passages, as taught by Lynwood et al., to maintain combustion at high flow rates with temperature below that necessary to sustain combustion at that flow rate. Providing ceramic foam supports with bypass passages in the second stage and of different shapes and spaced apart, and thus separate catalytic elements disposed along the flow axis of the combustor as claimed in Claim 13 and of different cross sections as claimed in Claim 15 and spaced

par as claimed in Claim 18, would have been obvious to one of ordinary skill in the art, as taught by Lynwood et al.

Providing the foam supports of different pore size grades or with different catalytic materials, as claimed in Claims 14 and 16, would have been obvious to one of ordinary skill in the art depending on the desired amount of catalytic combustion desired in each foam support.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dalla Betta et al (US 5,183,401) as applied to claim 13, and further in view of Huttenhofer et al (US 5,820,832).

Regarding claim 17, it would have been obvious to one having ordinary skill in the art at the time the invention to modify the invention of claim 13 with each catalytic element comprises an identical cross-section and is angularly rotated about the flow axis with respect to an adjacent catalytic element to cause mixing of a flow about the flow axis since any change in the structure and configuration of the catalyst can change the course of the flow (see Huttenhofer et al column 6, 3rd paragraph).

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dalla Betta et al (US 5,183,401) as applied to claim 6, and further in view of Huttenhofer et al (US 5,820,832).

Regarding claim 19, the Dalla Betta et al reference teaches a second catalytic stage (see column 10, 2nd paragraph) further comprises a tubular catalyst support (see column 8, 3rd paragraph).

The Dalla Betta et al reference does not teach the tubular catalyst support coated with a catalytic material on an outside surface and an inside surface.

The Huttenhofer reference teaches a catalyst support coated with a catalytic material on an outside surface and an inside surface (see column 4, 13th paragraph). The Huttenhofer reference does not teach a tubular catalyst support.

It would have been obvious to one having ordinary skill in the art at the time the invention to modify the second combustion stage of the Dalla Betta reference with catalytic material coating the outside and inside surfaces. It would give the catalytic structure added utility within the process where the fuel may come in contact with the catalyst on the outside surface, inside surface, or both.

Claims 1, 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dalla Betta et al (US 5,183,401) in view of Fay, III et al (US 6,048,266) and Lynwood et al. (US 5,228,847).

Regarding claim 1, the Dalla Betta et al reference teaches a catalytic combustor (see Abstract) comprising: a first catalytic stage comprising a metallic catalyst support

and receiving an oxidizer and a fuel and discharging a partially oxidized fuel/oxidizer mixture (see column 6, 4th and 5th paragraphs); catalyst support disposed within a pressure boundary defining a pressure boundary cross-sectional flow area (see Abstract), receiving a first portion of the mixture and presenting a support cross sectional flow area less than the pressure boundary cross-sectional flow area (see column 10, 3rd paragraph) to define a bypass passageway for allowing a second portion of the mixture to bypass the catalytic support (see column 11, 3rd paragraph), the second catalytic stage having an outlet temperature elevated sufficiently to completely oxidize the mixture without using a separate ignition source (see column 12, 4th paragraph); and an oxidation completion stage disposed downstream of the second catalytic stage for recombining the first and second portions of the mixture and completing oxidation of the mixture (see column 12, 5th paragraph).

The Dalla Betta et al reference does not teach foam catalyst support.

Fay, III et al. teach that ceramic or metallic reticulated foam for catalyst systems provide much greater surface contact and mixing at equivalent or reduced pressure drops and reduced catalyst dimensions compared to honeycomb structure (column 3, line 41 – column 4, line 36).

Lynwood et al. teach that combustion is maintained at high flow rates with temperature below that necessary to sustain combustion at that flow rate by providing foam or honeycomb catalyst body or bodies with combustion passages and bypass passages free of catalyst so that combustion takes place with part of the combustible mixture bypassing the combustion passages (columns 2-10).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the second combustion stage of the Dalla Betta et al reference with the reticulated ceramic foam catalyst support of the Fay, III et al reference to provide a catalyst support with greater surface contact and mixing at equivalent or reduced pressure drops and reduced catalyst dimensions compared to a honeycomb structure.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have also provided the ceramic foam support in the second stage with combustion passages and bypass passages, as taught by Lynwood et al., to maintain combustion at high flow rates with temperature below that necessary to sustain combustion at that flow rate. Providing the ceramic foam support with bypass passages, and thus cross-sectional flow area les than the pressure boundary cross-sectional flow area, as claimed, would have been obvious to one of ordinary skill in the art, as taught by Lynwood et al.

Regarding claims 3, Lynwood et al. disclose using a catalyst body which provides outer annular bypass region (column 7, lines 25-32, Fig. 1), thus a bypass passageway disposed around a perimeter of the foam support as claimed.

Regarding Claim 4, Lynwood et al. disclose using a catalyst body having a central hole ((column 7, lines 19-20, Fig. 1), thus a foam support comprising a donut-shaped cross-section as claimed.

Claims 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dalla Betta et al (US 5,183,401) in view of Fay, III et al (US 6,048,266) and Lynwood et al. (US 5,228,847) as applied to claim 1, and further in view of Spadaccini et al. (US 5,207,053).

Dalla Betta et al disclose using noble metals such as palladium and platinum or metal-oxygen catalyst material as the catalyst in the second catalytic stage.

Spadaccini et al. teach that catalyst used for combustion of fuel for turbines include precious metal catalyst such as platinum and palladium and zeolites (col. 5, lines 3-7).

It would have been obvious to one having ordinary skill in the art at the time the invention to have used any of palladium, platinum or zeolite for the catalytic material in the ceramic foam in the combustor of the references as combined , as taught by Spadaccini et al. as alternative catalyst used for combustion of fuel for turbines. The use of zeolite, as claimed in Claim 2, would have been obvious to one of ordinary skill in the art as a suitable catalyst for the second catalytic stage in the combustor of the references as combined.

Claims 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dalla Betta et al (US 5,183,401) in view of Fay, III et al (US 6,048,266) and Lynwood et al. (US 5,228,847) as applied to claim 1, and further in view of Kato (US 5,439,651).

The Kato reference teaches a cruciform cross-section (see column 3, 5$^{th}$ paragraph and Figure 3).

It would have been obvious to one having ordinary skill in the art at the time the invention to have modified the combustor of the references as combined to provide a catalyst foam support with a cruciform cross-section, as suggested by Kato, to provide a foam support providing bypass passages of different cross-sectional area depending on the desired amount of bypass.

Claims 24-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lynwood et al. (US 5,228,847) in view of Fay, III et al (US 6,048,266).

Lynwood et al. disclose a catalytic combustor comprising: a pressure boundary defining a pressure boundary cross-sectional flow area for conveying a fuel/oxidizer mixture; and a catalyst bodies (catalyst-coated, foam-support), either of foam or honeycomb, disposed within the pressure boundary for receiving a first portion of the mixture and presenting a support cross-sectional flow area less than the pressure boundary cross-sectional flow area to define a bypass passageway for allowing a second portion of the fuel/oxidizer mixture to bypass the foam support (columns 3-10).

Fay, III et al. teach that ceramic or metallic reticulated foam for catalyst systems provide much greater surface contact and mixing at equivalent or reduced pressure drops and reduced catalyst dimensions compared to honeycomb structure (column 3, line 41 – column 4, line 36).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided the catalyst bodies in the catalytic combustor of Lynwood et al. as catalyst-coated reticulated ceramic foam supports, as taught by Fay,

III et al, as providing much greater surface contact and mixing at equivalent or reduced pressure drops and reduced catalyst dimensions compared to honeycomb structure. Providing the foam supports of ceramic as claimed in Claim 31, would have been obvious to one of ordinary skill in the art, as taught by Fay, III et al., as either ceramic or metallic reticulate foam can be used as catalyst support.

Regarding claims 25, 27 and 30, Lynwood et al. disclose a catalyst body which provides outer annular bypass region which forms about 32% of the totals cross section area (column 7, lines 25-32, Fig. 1), thus a cross-section sized to bypass from 25% to 80 % of the mixture past the foam support element as clamed in Claim 25, passageway disposed around a portion of a perimeter of the foam support as claimed in Claim 27 and cross-section perimeter smaller than an internal perimeter of the pressure boundary as claimed in Claim 30. It would have been obvious to one of ordinary skill in the art that the foam support would have to be supported by spaced apart standoffs in order to provide an outer annular region around the foam support yet provide the foam support supported within the pressure boundary.

Regarding claim 26, Lynwood et al. disclose first and second catalyst bodies providing bypass passageways, thus defining a plurality of separate passageways within the pressure boundary.

Regarding Claim 29, Lynwood et al. disclose a catalyst body having a central hole ((column 7, lines 19-20, Fig. 1), thus a foam support comprising a donut-shaped cross-section.

Claims 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lynwood et al. (US 5,228,847) in view of Fay, III et al (US 6,048,266) as applied to Claim 24, and further in view of Kato (US 5,439,651).

Regarding claim 28, Lynwood et al. do not teach the support comprises cruciform cross-section.

The Kato reference teaches a cruciform cross-section (see column 3, 5th paragraph and Figure 3).

It would have been obvious to one having ordinary skill in the art at the time the invention to have modified the combustor of the references as combined to provide a catalyst foam support with a cruciform cross-section, as suggested by Kato, to provide a foam support providing bypass passages of different cross-sectional area depending on the desired amount of bypass.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Luoma et al (US 5,534,476), Ostroff (US 5,401,483), Socha, Jr. (US 5,966,929), Maus et al (US 5,173,267), Bell et al (US 5,080,577), and Seo et al (The Catalytically Supported Combustor for Lean Mixtures, 1999).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natasha Young whose telephone number is 571-270-3163. The examiner can normally be reached on Mon-Fri 7:30-5 (alternate Fri off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NY

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